~~NONVOLATILE SEMICONDUCTOR MEMORY DEVICE AND PROCESS OF PRODUCTION AND WRITE METHOD THEREOF~~

ABSTRACT OF THE DISCLOSURE

A nonvolatile semiconductor memory device featuring a reducing operating voltage while maintaining a good disturbance characteristic and high speed in a write operation, including a gate insulating film and gate electrode stacked on a channel forming region of a semiconductor provided on the surface of a substrate and planarly dispersed charge storing means such as carrier traps in a nitride film or near the interface with the top insulating film, provided in the gate insulating film, the gate insulating film including an FN tunnel film having a dielectric constant larger than that of a silicon oxide film and exhibiting an FN electroconductivity, whereby the thickness of the gate insulating film, converted to that of a silicon oxide film, can be reduced and the voltage can be reduced. Further, to reduce the operation voltage, ~~it is possible to provide~~ a pull-up electrode is provided near the gate electrode through the dielectric film and a pull-up gate bias circuit supplying a predet rmined voltage to the same and boost

the gate electrode by capacity coupling.